

## STATE OF TENNESSEE DEPARTMENT OF HEALTH **ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Sent To:

**Greg Denton** 

TDEC-WPC

6th Floor, L & C Tower Annex

401 Church Street

Nashville, TN 37243-1534

Michael Atchley TDEC-WPC

Knoxville FO

3711 Middlebrook Pike Knoxville, TN 37921

N00004568 Lab ID:

Nashville Central Laboratory

Sampling Agency: TDEC: Division of Water Pollution Control

**Billing Code:** 

327.34-20

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Analytical Supervisor

N00004568001

**Project Name:** 

Sample Description:

**EMORY RIVER MILE 12.1** 

Sampler Project Name: TVA ASH SPILL

**Project Site No.:** 

Station No.:

EMORY012.1RO Date/Time Collected: 05/26/2009 10:45

Sampler's Name:

**GEOFF KLEIN** 

County: Sample Matrix: **ROANE - 73** 

EFO:

Water Knoxville

Sampling Agency: **Billing Code:** 

**TDEC-WPC** 327.34-20

Send Report To: **Agency Invoiced:** 

TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/26/2009 15:00

Received By:

P D Wilson

**Field Determinations** 

pH:

7.68

pH Units

uMHO

Chlorine, residual:

Conductivity: Temperature: 77

20.60 deg C

**Dissolved Oxygen: 8.30** 

mg/L

Other:

Flow:

**CFS** 

TEST: Alkalinity, Total	MET					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	21	mg/L	3.8	10	M Chen	5/27/2009

TEST: Hardness, Calcium	ME.	METHOD: SM 3500-Ca D				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	24	mg/L	0.7	1	P Leathers	5/27/2009

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	5/27/2009

TEST: Residue, Suspended	METHOD: SM 2540D								METHOD: SM 2540D		
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE					
Total Suspended Solids	U	mg/L	10	10	A Peeples	5/29/2009					

J - Estimated value between MDL and MQL

**MDL - Method Detection Limit** 

**MQL - Method Quantitation Limit** 

N00004568002

Project Name:

Sample Description:

**EMORY RIVER MILE 2.1** 

Sampler Project Name: TVA ASH SPILL

**Project Site No.:** 

2

Station No.: Date/Time Collected:

EMORY002.1RO 05/26/2009 11:42

Sampler's Name: County:

**GEOFF KLEIN** 

Sample Matrix:

**ROANE - 73** Water

EFO: **Sampling Agency:**  Knoxville TDEC-WPC 327.34-20

**Billing Code:** Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

**Field Determinations** 

:Hq

Chlorine, residual:

89

pH Units

Conductivity:

**uMHO** 

Temperature:

22.41 deg C Dissolved Oxygen: 8.87

7.49

mg/L

Other:

Flow:

**CFS** 

TEST: Alkalinity, Total METHOD: EPA 310.2							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Alkalinity	26	mg/L	3.8	10	M Chen	5/27/2009	

TEST: Hardness, Calcium	ME.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	36	mg/L	0.7	1	P Leathers	5/27/2009

TEST: Residue, Settleable	ME					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	5/27/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	26	mg/L	10	10	A Peeples	5/29/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit **MQL - Method Quantitation Limit** 

N00004568003

**Field Determinations** 

**Project Name:** 

pH:

pH Units

Sample Description: Sampler Project Name: TVA ASH SPILL

EMORY RIVER MILE 1.9 AT UNDERWATER V Chlorine, residual:

Conductivity:

116

7.62

**uMHO** 

**Project Site No.:** 

21.50 deg C

**Station No.:** 

EMORY001.9 RO

Temperature:

Dissolved Oxygen: 10.01

**Date/Time Collected:** 

05/26/2009 11:51 Other:

mg/L

Sampler's Name: County:

**GEOFF KLEIN ROANE - 73** 

Flow:

CFS

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency: **Billing Code:** 

TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced:

**TDEC-WPC** 

**Priority Date:** 

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	60	mg/L	3.8	10	M Chen	5/27/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	55	mg/L	0.7	1	P Leathers	5/27/2009

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	5/27/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	13	mg/L	10	10	A Peeples	5/29/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

**MQL - Method Quantitation Limit** 

N00004568004

**Project Name:** 

**Sample Description:** 

**EMORY RIVER MILE 1.7** 

Sampler Project Name: TVA ASH SPILL

**Project Site No.:** 

3FB

**Station No.:** 

EMORY001.7RO

**Date/Time Collected:** Sampler's Name:

12:00 05/26/2009

County:

**GEOFF KLEIN** 

Sample Matrix:

ROANE - 73

EFO:

Water Knoxville

Sampling Agency:

**TDEC-WPC** 

**Billing Code:** Send Report To: Agency Invoiced:

327.34-20 TDEC-WPC **TDEC-WPC** 

**Priority Date:** 

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

**Field Determinations** 

:Hq

Chlorine, residual: Conductivity: Temperature:

**Dissolved Oxygen:** 

Other: Flow:

**CFS** 

TEST: Alkalinity, Total METHOD: EPA 310.2							
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY:						
Total Alkalinity	U	mg/L	3.8	10	M Chen	5/27/2009	

TEST: Hardness, Calcium METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	U	mg/L	0.7	1	P Leathers	5/27/2009

TEST: Residue, Suspended METHOD: SM 2540D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	5/29/2009

J - Estimated value between MDL and MQL

**MDL - Method Detection Limit** 

**MQL - Method Quantitation Limit** 

N00004568005

**Project Name:** 

Sample Description:

**EMORY RIVER MILE 1.7** 

Sampler Project Name: TVA ASH SPILL

**Station No.:** 

**Date/Time Collected:** 

EMORY001.7RO 05/26/2009 12:00

Sampler's Name:

**Project Site No.:** 

**GEOFF KLEIN** 

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

**Billing Code:** 

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

**Field Determinations** 

:Hq

8.21

pH Units

Chlorine, residual:

Conductivity:

149

uMHO

Temperature:

21.72 deg C **Dissolved Oxygen: 11.14** 

mg/L

Other:

Flow:

**CFS** 

TEST: Alkalinity, Total METHOD: EPA 310.2							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Alkalinity	84	mg/L	3.8	10	M Chen	5/27/2009	

TEST: Hardness, Calcium	MET	THOD: SM 350	0-Ca D				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	72	mg/L	0.7	1	P Leathers	5/27/2009	

TEST: Residue, Settleable	ME	ΓHOD: SM 254	0F	:		
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0,10	P Leathers	5/27/2009

TEST: Residue, Suspended METHOD: SM 2540D							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Suspended Solids	U	mg/L	10	10	A Peeples	5/29/2009	

J - Estimated value between MDL and MQL

**MDL - Method Detection Limit MQL - Method Quantitation Limit** 

N00004568006

**Project Name:** 

Sample Description:

**EMORY RIVER MILE 1.7** 

Sampler Project Name: TVA ASH SPILL

Project Site No.:

3FD

**Station No.: Date/Time Collected:**  EMORY001.7RO 05/26/2009 12:00

Sampler's Name:

**GEOFF KLEIN** 

County:

ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville

**Billing Code:** 

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

**Field Determinations** 

pH:

8.21

pH Units

Chlorine, residual:

Conductivity:

149

uMHO

Temperature:

21.72 deg C Dissolved Oxygen: 11.14

Other:

Flow:

mg/L

**CFS** 

TEST: Alkalinity, Total	METHOD: EPA 310.2							
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY:					DATE		
Total Alkalinity	86	mg/L	3.8	10	M Chen	5/27/2009		

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	85	mg/L	0.7	1	P Leathers	5/27/2009	

TEST: Residue, Settleable	ME:					
ANALYTE	RESULT	UNITS	UNITS MDL N		MQL ANALYZED BY:	
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	5/27/2009

TEST: Residue, Suspended METHOD: SM 2540D							
RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
U	mg/L	10	10	A Peeples	5/29/2009		
		RESULT UNITS	RESULT UNITS MDL	RESULT UNITS MDL MQL	RESULT UNITS MDL MQL ANALYZED BY:		

J - Estimated value between MDL and MQL

**MDL - Method Detection Limit MQL - Method Quantitation Limit** 

N00004568007

**Project Name:** 

Sample Description:

**EMORY RIVER MILE 0.1** 

Sampler Project Name: TVA ASH SPILL

**Project Site No.:** 

Station No.:

EMORY000.1RO

Date/Time Collected: Sampler's Name:

05/26/2009 12:12

County:

**GEOFF KLEIN** 

Sample Matrix:

**ROANE - 73** 

EFO:

Water

Sampling Agency:

Knoxville

**Billing Code:** 

**TDEC-WPC** 327.34-20 **TDEC-WPC** 

Send Report To: Agency Invoiced:

TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

**Field Determinations** 

pH:

8.47

pH Units

Chlorine, residual:

Conductivity:

198

uMHO

Temperature:

21.80 deg C

Dissolved Oxygen: 11.84

mg/L

Other:

Flow:

**CFS** 

TEST: Alkalinity, Total METHOD: EPA 310.2							
ANALYTE	RESULT	ANALYZED BY:	DATE				
Total Alkalinity	93	mg/L	3.8	10	M Chen	5/27/2009	

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	83	mg/L	0.7	1	P Leathers	5/27/2009

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	5/27/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	<b>11</b> *******	mg/L	10	10	A Peeples	5/29/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit **MQL - Method Quantitation Limit** 

N00004568008

**Project Name:** 

Sample Description:

**Station No.:** 

**CLINCH RIVER MILE 2.3** 

Sampler Project Name: TVA ASH SPILL

**Project Site No.:** 

CLINC002.3RO

**Date/Time Collected:** 

05/26/2009 12:22

Sampler's Name:

**GEOFF KLEIN** 

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To:

TDEC-WPC

Agency Invoiced: **Priority Date:** 

**TDEC-WPC** 

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

**Field Determinations** 

Dissolved Oxygen: 11.40

pH:

8.35

pH Units

Chlorine, residual:

Conductivity:

190

**uMHO** 

Temperature:

21.68 deg C

mg/L

Other:

Flow:

**CFS** 

TEST: Alkalinity, Total METHOD: EPA 310.2							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Alkalinity	74	mg/L	3.8	10	M Chen	5/27/2009	

TEST: Hardness, Calcium METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	64	mg/L	0.7	1	P Leathers	5/27/2009

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	5/27/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	11	mg/L	10	10	A Peeples	5/29/2009

J - Estimated value between MDL and MQL

**MDL - Method Detection Limit MQL - Method Quantitation Limit** 

N00004568009

**Project Name:** 

Sample Description:

CLINCH RIVER TVA DISCHARGE POINT

Sampler Project Name: TVA ASH SPILL

5A

Station No.:

KINGASHOUTF2

Date/Time Collected:

05/26/2009 12:31

Sampler's Name:

**Project Site No.:** 

**GEOFF KLEIN** 

County:

**ROANE - 73** 

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville

**Billing Code:** 

TDEC-WPC

Send Report To:

327.34-20 TDEC-WPC

Agency Invoiced:

TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

1	り	/ V II	SOL	l	

**Field Determinations** 

pH:

7.90

pH Units

Chlorine, residual:

Conductivity:

199

uMHO

Temperature:

21.05 deg C Dissolved Oxygen: 10.40

mg/L

Other:

Flow:

**CFS** 

TEST: Alkalinity, Total METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	75	mg/L	3.8	10	M Chen	5/27/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS MDL		MQL	ANALYZED BY:	DATE
Calcium hardness	63	mg/L	0.7	1	P Leathers	5/27/2009

TEST: Residue, Settleable	METHOD: SM 2540F						
ANALYTE	RESULT	UNITS MDL		MQL	ANALYZED BY:	DATE	
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	5/27/2009	

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	13	mg/L	10	10	A Peeples	5/29/2009

J - Estimated value between MDL and MQL

**MDL - Method Detection Limit** 

**MQL - Method Quantitation Limit** 

N00004568010

**Project Name:** Sample Description:

CLINCH RIVER MILE 4.5 NEAR SUGAR GRO\ Chlorine, residual:

**Field Determinations** 

Dissolved Oxygen: 12.56

Conductivity:

Temperature:

8.50

213

21.78 deg C

pH Units

**uMHO** 

mg/L

**CFS** 

pH:

Other:

Flow:

Sampler Project Name: TVA ASH SPILL

**Project Site No.:** 

Station No.:

CLINC004.5RO

Date/Time Collected:

05/26/2009 12:41

Sampler's Name:

**GEOFF KLEIN** 

County:

**ROANE - 73** 

Sample Matrix: EFO:

Water

Knoxville

**Sampling Agency: Billing Code:** 

TDEC-WPC 327.34-20

**Send Report To: Agency Invoiced:** 

TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

TEST: Alkalinity, Total	METHOD: EPA 310.2							
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY: DAT							
Total Alkalinity	100	mg/L	3.8	10	M Chen	5/27/2009		

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	92	mg/L	0.7	1	P Leathers	5/27/2009	

TEST: Residue, Settleable	ME.	THOD: SM 254	l0F			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	5/27/2009

TEST: Residue, Suspended METHOD: SM 2540D							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Suspended Solids	U	mg/L	10	10	A Peeples	5/29/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

**MQL - Method Quantitation Limit** 



## STATE OF TENNESSEE **DEPARTMENT OF HEALTH ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Sent To:

Greg Denton

TDEC-WPC

6th Floor, L & C Tower Annex

401 Church Street

Nashville, TN 37243-1534

Michael Atchley TDEC-WPC

Knoxville FO

3711 Middlebrook Pike Knoxville, TN 37921

N00004568 Lab ID:

Nashville Central Laboratory

Sampling Agency: TDEC: Division of Water Pollution Control

Billing Code:

327.34-20

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Analytical Supervisor

N00004568001

**Project Name:** 

Sample Description: **EMORY RIVER MILE 12.1** 

Sampler Project Name: TVA ASH SPILL

**Project Site No.:** 

**Station No.:** 

EMORY012.1RO **Date/Time Collected:** 05/26/2009 10:45

Sampler's Name:

**GEOFF KLEIN** 

County:

ROANE - 73

Sample Matrix: EFO:

Water Knoxville

Sampling Agency: **Billing Code:** Send Report To:

TDEC-WPC 327.34-20 TDEC-WPC TDEC-WPC

Agency Invoiced: **Priority Date:** 

Date/Time Received:

05/26/2009 15:00

Received By:

P D Wilson

**Field Determinations** 

pH:

7.68

pH Units

Chlorine, residual:

Conductivity:

77

uMHO

Temperature:

20.60 deg C Dissolved Oxygen: 8.30

mg/L

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	05/27/2009				S Ufegbu	5/27/2009	

TEST: ICP METHOD: EPA 200.7							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	180	μg/L	2.9	10	A Bass	5/29/2009	

TEST: ICP-MS	ME	ΓHOD: EPA 20	0.8			*
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	120	μg/L	6.4	10	A Wilson	5/27/2009
Antimony	U	μg/L	0.33	1	A Wilson	5/27/2009
Arsenic	U	μg/L	0.93	5	A Wilson	5/27/2009
Barium	30	μg/L	2.5	5	A Wilson	5/27/2009
Beryllium	U	μg/L	0.11	1	A Wilson	5/27/2009
Cadmium	U	μg/L	0.41	1	A Wilson	5/27/2009
Chromium	U	μg/L	2.0	5	A Wilson	5/27/2009
Cobalt	0.22J	μg/L	0.04	1	A Wilson	5/27/2009
Copper	1.8	μg/L	0.38	1	A Wilson	5/27/2009
Lead	0.20J	μg/L	0.10	1	A Wilson	5/27/2009
Manganese	48	μg/L	0.42	1	A Wilson	5/27/2009
Nickel	1.2	μg/L	0.25	1	A Wilson	5/27/2009
Selenium	U	μg/L	1.3	5	A Wilson	5/27/2009
Silver	U	μg/L	0.03	0.25	A Wilson	5/27/2009
Thallium	0.052J	μg/L	0.03	1	A Wilson	5/27/2009
Vanadium	U	μg/L	3.4	5	A Wilson	5/27/2009
Zinc	U	μg/L	1.9	5	A Wilson	5/27/2009

N00004568001

**Project Name:** 

Sample Description:

**EMORY RIVER MILE 12.1** 

Sampler Project Name: TVA ASH SPILL

**Project Site No.:** Station No.:

EMORY012.1RO

Date/Time Collected:

05/26/2009 10:45

Sampler's Name:

**GEOFF KLEIN** 

County: Sample Matrix: ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

**Billing Code:** Send Report To: 327.34-20 TDEC-WPC

TDEC-WPC

Agency Invoiced: **Priority Date:** 

Date/Time Received:

05/26/2009

15:00

**RESULT** 

0.09J

Received By:

TEST: Mercury

**ANALYTE** 

Mercury

P D Wilson

METHOD: EPA 245.1

UNITS

μg/L

MDL 0.029 MQL 0.2

**ANALYZED BY:** A Bass

DATE 5/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

**MQL - Method Quantitation Limit** 

U - Undetected

**Field Determinations** 

:Hq

7.68

pH Units

Chlorine, residual: Conductivity:

Temperature:

**uMHO** 

77

20.60 deg C

Dissolved Oxygen: 8.30

mg/L

Other:

Flow:

N00004568002

**Project Name:** 

Sample Description:

**EMORY RIVER MILE 2.1** 

Sampler Project Name: TVA ASH SPILL

**Station No.:** 

**Project Site No.:** 

EMORY002.1RO

**Date/Time Collected:** 

05/26/2009 11:42

Sampler's Name: County:

**GEOFF KLEIN** 

Sample Matrix:

ROANE - 73 Water

EFO: Sampling Agency: Knoxville TDEC-WPC 327.34-20

**Billing Code:** Send Report To: **Agency Invoiced:** 

TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

Field Determinations

pH:

7.49

pH Units

Chlorine, residual:

Conductivity:

89

uMH<sub>0</sub>

Temperature:

22.41 deg C Dissolved Oxygen: 8.87

mg/L

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	05/27/2009				S Ufegbu	5/27/2009

TEST: ICP	METHOD: EPA 200.7							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Iron	610	μg/L	2.9	10	A Bass	5/29/2009		

TEST: ICP-MS	MET	THOD: EPA 200	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	1200	μg/L	64.0	100	A Wilson	5/27/2009
Antimony	0.36J	μg/L	0.33	1	A Wilson	5/27/2009
Arsenic	6.0	μg/L	0.93	5	A Wilson	5/27/2009
Barium	64	μg/L	2.5	5	A Wilson	5/27/2009
Beryllium	0.25J	μg/L	0.11	1	A Wilson	5/27/2009
Cadmium	U	μg/L	0.41	1	A Wilson	5/27/2009
Chromium	2.0J	μg/L	2.0	5	A Wilson	5/27/2009
Cobalt	0.94J	μg/L	0.04	1	A Wilson	5/27/2009
Copper	3.2	μg/L	0.38	1	A Wilson	5/27/2009
Lead	1.8	μg/L	0.10	1	A Wilson	5/27/2009
Manganese	72	μg/L	0.42	1	A Wilson	5/27/2009
Nickel	2.5	μg/L	0.25	1	A Wilson	5/27/2009
Selenium	U	μg/L	1.3	5	A Wilson	5/27/2009
Silver	U	μg/L	0.03	0.25	A Wilson	5/27/2009
Thallium	0.21J	μg/L	0.03	1	A Wilson	5/27/2009
Vanadium	4.2J	μg/L	3.4	5	A Wilson	5/27/2009
Zinc	U	μg/L	1.9	5	A Wilson	5/27/2009

N00004568002

**Project Name:** 

Sample Description:

**EMORY RIVER MILE 2.1** 

Sampler Project Name: TVA ASH SPILL

Project Site No.:

Station No.:

Date/Time Collected:

EMORY002.1RO 05/26/2009 11:42

Sampler's Name:

**GEOFF KLEIN** 

County: Sample Matrix: ROANE - 73

EFO:

Water

Sampling Agency: **Billing Code:** 

Knoxville TDEC-WPC 327.34-20

Send Report To: **Agency Invoiced:** 

TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

**Field Determinations** 

pH:

7.49

pH Units

Chlorine, residual:

Conductivity:

89

uMHO

Temperature:

22.41 deg C Dissolved Oxygen: 8.87

mg/L

Other:

Flow:

CFS

TEST: Mercury METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	5/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

Sample Description:

N00004568003

**Project Name:** 

EMORY RIVER MILE 1.9 AT UNDERWATER V Chlorine, residual:

Sampler Project Name: TVA ASH SPILL

**Project Site No.:** 

Station No.:

2B

EMORY001.9 RO Date/Time Collected: 05/26/2009 11:51

Sampler's Name:

**GEOFF KLEIN** 

County:

Sample Matrix:

ROANE - 73 Water

EFO: Sampling Agency: Knoxville TDEC-WPC 327.34-20

**Billing Code:** Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/26/2009 15:00

Received By:

P D Wilson

**Field Determinations** 

pH:

7.62

pH Units

Conductivity:

116

uMHO

Temperature: Dissolved Oxygen: 10.01

21.50 deg C

mg/L

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	05/27/2009				S Ufegbu	5/27/2009	

TEST: ICP	T: ICP METHOD: EPA 200.7						
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY: DATE						
Iron	350	μg/L	2.9	10	A Bass	5/29/2009	

TEST: ICP-MS	ME	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	500	μg/L	64.0	100	A Wilson	5/27/2009
Antimony	U	μg/L	0.33	1	A Wilson	5/27/2009
Arsenic	1.8J	μg/L	0.93	5	A Wilson	5/27/2009
Barium	44	μg/L	2.5	5	A Wilson	5/27/2009
Beryllium	U	μg/L	0.11	1	A Wilson	5/27/2009
Cadmium	U	μg/L	0.41	1	A Wilson	5/27/2009
Chromium	U	μg/L	2.0	5	A Wilson	5/27/2009
Cobalt	0.47J	μg/L	0.04	1	A Wilson	5/27/2009
Copper	4.3	μg/L	0.38	1	A Wilson	5/27/2009
Lead	0.74J	μg/L	0.10	1	A Wilson	5/27/2009
Manganese	57	μg/L	0.42	1	A Wilson	5/27/2009
Nickel	1.8	μg/L	0.25	1	A Wilson	5/27/2009
Selenium	U	μg/L	1.3	5	A Wilson	5/27/2009
Silver	U	μg/L	0.03	0.25	A Wilson	5/27/2009
Thallium	0.095J	μg/L	0.03	1	A Wilson	5/27/2009
Vanadium	U	μg/L	3.4	5	A Wilson	5/27/2009
Zinc	4.8J	μg/L	1.9	5	A Wilson	5/27/2009

N00004568003

**Project Name:** 

Sample Description: Sampler Project Name: TVA ASH SPILL

EMORY RIVER MILE 1.9 AT UNDERWATER V Chlorine, residual:

**Field Determinations** 

Dissolved Oxygen: 10.01

Conductivity:

Temperature:

7.62

116

21.50 deg C

pH Units

**uMHO** 

mg/L

CFS

pH:

Other:

Flow:

Project Site No.:

Station No.:

2B

EMORY001.9 RO

Date/Time Collected: Sampler's Name:

05/26/2009 11:51

County:

**GEOFF KLEIN** 

Sample Matrix:

ROANE - 73

EFO:

Water Knoxville

Sampling Agency:

TDEC-WPC

Billing Code: Send Report To: 327.34-20 TDEC-WPC

Agency Invoiced:

TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/26/2009

Received By:

P D Wilson

15:00

TEST: Mercury	ME.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	0.10J	μg/L	0.029	0.2	A Bass	5/27/2009
<del></del>					·	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

N00004568004

**Project Name:** 

Sample Description:

**EMORY RIVER MILE 1.7** 

Sampler Project Name: TVA ASH SPILL

**Project Site No.:** 

3FB

**Station No.:** 

EMORY001.7RO

Date/Time Collected:

05/26/2009 12:00

Sampler's Name: County:

**GEOFF KLEIN** 

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

**Billing Code:** Send Report To: Agency Invoiced: 327.34-20 TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

**Field Determinations** 

pH:

Chlorine, residual: Conductivity: Temperature: **Dissolved Oxygen:** 

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY: DA					DATE
Digestion Metals	05/27/2009			•	S Ufegbu	5/27/2009

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	U	μg/L	2.9	10	A Bass	5/29/2009

TEST: ICP-MS	ME	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	U	μg/L	6.4	10	A Wilson	5/27/2009
Antimony	U	μg/L	0.33	1	A Wilson	5/27/2009
Arsenic	U	μg/L	0.93	5	A Wilson	5/27/2009
Barium	U	μg/L	2.5	5	A Wilson	5/27/2009
Beryllium	U	μg/L	0.11	1	A Wilson	5/27/2009
Cadmium	U	μg/L	0.41	1	A Wilson	5/27/2009
Chromium	U	μg/L	2.0	5	A Wilson	5/27/2009
Cobalt	U	μg/L	0.04	1	A Wilson	5/27/2009
Copper	U	μg/L	0.38	1	A Wilson	5/27/2009
Lead	U	μg/L	0.10	1	A Wilson	5/27/2009
Manganese	0.63J	μg/L	0.42	1	A Wilson	5/27/2009
Nickel	U	μg/L	0.25	1	A Wilson	5/27/2009
Selenium	U	μg/L	1.3	5	A Wilson	5/27/2009
Silver	U	μg/L	0.03	0.25	A Wilson	5/27/2009
Thallium	U	μg/L	0.03	1	A Wilson	5/27/2009
Vanadium	U	μg/L	3.4	5	A Wilson	5/27/2009
Zinc	15	μg/L	1.9	5	A Wilson	5/27/2009

N00004568004

**Project Name:** 

Sample Description:

**EMORY RIVER MILE 1.7** 

Sampler Project Name: TVA ASH SPILL

**Project Site No.:** 

3FB

**Station No.:** 

EMORY001.7RO

Date/Time Collected:

05/26/2009 12:00 **GEOFF KLEIN** 

Sampler's Name: County:

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency: Billing Code:

Knoxville TDEC-WPC

Send Report To: Agency Invoiced: 327.34-20 TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

**Field Determinations** 

:Ha

Chlorine, residual:

Conductivity: Temperature:

**Dissolved Oxygen:** 

Other:

Flow:

**CFS** 

TEST: Mercury METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL.	MQL	ANALYZED BY:	DATE
Mercury	0.08J	μg/L	0.029	0.2	A Bass	5/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004568005

**Project Name:** 

Sample Description:

**EMORY RIVER MILE 1.7** 

Sampler Project Name: TVA ASH SPILL

**Project Site No.:** 

Station No.:

EMORY001.7RO

Date/Time Collected: Sampler's Name:

05/26/2009 12:00

County:

**GEOFF KLEIN** ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency: .

Knoxville TDEC-WPC

**Billing Code:** Send Report To: Agency Invoiced: 327.34-20 TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

**Field Determinations** 

pH:

8.21

pH Units

Chlorine, residual:

Conductivity:

149

uMHO

Temperature:

21.72 deg C

mg/L

Dissolved Oxygen: 11.14 Other:

Flow:

TEST: Digestion Metals METHOD: EPA 200.2						
ANALYTE	RESULT UNITS MDL MQL				ANALYZED BY:	DATE
Digestion Metals	05/27/2009				S Ufegbu	5/27/2009

TEST: ICP METHOD: EPA 200.7							
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY: DAT						
Iron	230	μg/L	2.9	10	A Bass	5/29/2009	

TEST: ICP-MS	ME.	ΓHOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	360	μg/L	64.0	100	A Wilson	5/27/2009
Antimony	U	μg/L	0.33	1	A Wilson	5/27/2009
Arsenic	U	µg/L	0.93	5	A Wilson	5/27/2009
Barium	39	μg/L	2.5	5	A Wilson	5/27/2009
Beryllium	U	μg/L	0.11	1	A Wilson	5/27/2009
Cadmium	U	μg/L	0.41	1	A Wilson	5/27/2009
Chromium	U	μg/L	2.0	5	A·Wilson	5/27/2009
Cobalt	0.28J	μg/L	0.04	1	A Wilson	5/27/2009
Copper	1.9	μg/L	0.38	1	A Wilson	5/27/2009
Lead	0.40J	μg/L	0.10	1	A Wilson	5/27/2009
Manganese	38	μg/L	0.42	1	A Wilson	5/27/2009
Nickel	1.5	μg/L	0.25	1	A Wilson	5/27/2009
Selenium	U	μg/L	1.3	5	A Wilson	5/27/2009
Silver	U	μg/L	0.03	0.25	A Wilson	5/27/2009
Thallium	0.066J	μg/L	0.03	1	A Wilson	5/27/2009
Vanadium	Ū	μg/L	3.4	5	A Wilson	5/27/2009
Zinc	U	μg/L	1.9	5	A Wilson	5/27/2009

N00004568005

**Project Name:** 

Sample Description:

**EMORY RIVER MILE 1.7** 

Sampler Project Name: TVA ASH SPILL

**Project Site No.:** 

Station No.: Date/Time Collected: EMORY001.7RO

Sampler's Name:

05/26/2009 12:00 **GEOFF KLEIN** 

County:

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC 327.34-20

**Billing Code:** Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/26/2009

15:00

Received By:

**TEST: Mercury** 

**ANALYTE** 

P D Wilson

MET	HOD: EPA 24	5.1		
RESULT	UNITS	MDL	MQL	ANALYZED BY:

**Field Determinations** 

Dissolved Oxygen: 11.14

Chlorine, residual:

Conductivity:

Temperature:

8.21

149

21.72 deg C

pH Units

uMHO

mg/L

**CFS** 

DATE

pH:

Other:

Flow:

0.029 0.2 A Bass 0.04J μg/L 5/27/2009 Mercury

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004568006

**Project Name:** 

Sample Description:

**EMORY RIVER MILE 1.7** 

Sampler Project Name: TVA ASH SPILL

Project Site No.:

3FD

**Station No.:** 

EMORY001.7RO

Date/Time Collected:

05/26/2009 12:00

Sampler's Name:

**GEOFF KLEIN** 

County: Sample Matrix: ROANE - 73

EFO:

Water Knoxville

Sampling Agency: **Billing Code:** 

TDEC-WPC

Send Report To: Agency Invoiced: 327.34-20 TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

**Field Determinations** 

**Dissolved Oxygen: 11.14** 

pH:

8.21

pH Units

Chlorine, residual:

Conductivity:

149

uMHO

Temperature:

21.72 deg C

mg/L

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT UNITS MDL MQL ANALY					DATE
Digestion Metals	05/27/2009	•			S Ufegbu	5/27/2009

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	210	μg/L	2.9	10	A Bass	5/29/2009

TEST: ICP-MS	ME.	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	290	μg/L	64.0	100	A Wilson	5/27/2009
Antimony	, <b>U</b>	μg/L	0.33	1	A Wilson	5/27/2009
Arsenic	U	μg/L	0.93	5	A Wilson	5/27/2009
Barium	42	μg/L	2.5	5	A Wilson	5/27/2009
Beryllium	U	μg/L	0.11	1	A Wilson	5/27/2009
Cadmium	U	μg/L	0.41	1	A Wilson	5/27/2009
Chromium	U	μg/L	2.0	5	A Wilson	5/27/2009
Cobalt	0.30J	μg/L	0.04	1	A Wilson	5/27/2009
Copper	2.1	μg/L	0.38	1	A Wilson	5/27/2009
Lead	0.38J	μg/L	0.10	1	A Wilson	5/27/2009
Manganese	43	μg/L	0.42	1	A Wilson	5/27/2009
Nickel	1.8	μg/L	0.25	1	A Wilson	5/27/2009
Selenium	U	μg/L	1.3	5	A Wilson	5/27/2009
Silver	U	μg/L	0.03	0.25	A Wilson	5/27/2009
Thallium	0.060J	μg/L	0.03	1	A Wilson	5/27/2009
Vanadium	U	μg/L	3.4	5	A Wilson	5/27/2009
Zinc	U	μg/L	1.9	5	, A Wilson	5/27/2009

N00004568006

**Project Name:** 

Sample Description: **EMORY RIVER MILE 1.7** 

Sampler Project Name: TVA ASH SPILL

**Project Site No.:** 

3FD

Station No.: EMORY001.7RO

Date/Time Collected: Sampler's Name:

12:00 05/26/2009 **GEOFF KLEIN** 

County:

Sample Matrix:

ROANE - 73

EFO: Sampling Agency: Water Knoxville

**Billing Code:** 

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

**Field Determinations** 

pH:

8.21

pH Units

Chlorine, residual:

Conductivity:

149

uMHO

Temperature:

21.72 deg C

mg/L

Dissolved Oxygen: 11.14 Other:

Flow:

CFS

TEST: Mercury	MET	ГНОD: EPA 24	5.1			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	0.03J	μg/L	0.029	0.2	A Bass	5/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004568007

**Project Name:** 

Sample Description:

**EMORY RIVER MILE 0.1** 

Sampler Project Name: TVA ASH SPILL

**Project Site No.:** 

Station No.: Date/Time Collected:

EMORY000.1RO 05/26/2009 12:12

Sampler's Name:

**GEOFF KLEIN** 

County: Sample Matrix: ROANE - 73 Water

EFO: Sampling Agency: Knoxville TDEC-WPC

**Billing Code:** Send Report To: 327.34-20 TDEC-WPC TDEC-WPC

Agency Invoiced: **Priority Date:** 

Date/Time Received:

05/26/2009 15:00

Received By:

P D Wilson

**Field Determinations** 

pH:

8.47

pH Units

Chlorine, residual:

Conductivity:

198

uMHO

Temperature:

21.80 deg C

Dissolved Oxygen: 11.84

mg/L

Other:

Flow:

TEST: Digestion Metals	MET	HOD: EPA 20	0.2			
ANALYTE	RESULT	UNITS	MDL	MQL	DATE	
Digestion Metals	05/27/2009				S Ufegbu	5/27/2009

TEST: ICP	MET	THOD: EPA 20	0.7			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	250	μg/L	2.9	10	A Bass	5/29/2009

TEST: ICP-MS	ME	ΓHOD: EPA 20	0.8				
ANALYTE	RESULT	UNITS	MDL	MQL ANALYZED BY		: DATE	
Aluminum	360	μg/L	64.0	100	A Wilson	5/27/2009	
Antimony	U	μg/L	0.33	1	A Wilson	5/27/2009	
Arsenic	U	μg/L	0.93	5	A Wilson	5/27/2009	
Barium	34	μg/L	2.5	5	A Wilson	5/27/2009	
Beryllium	U	μg/L	0.11	1	A Wilson	5/27/2009	
Cadmium	U	μg/L	0.41	1	A Wilson	5/27/2009	
Chromium	Ų	μg/L	2.0	5	A Wilson	5/27/2009	
Cobalt	0.27J	μg/L	0.04	1	A Wilson	5/27/2009	
Copper	1.9	μg/L	0.38	1	A Wilson	5/27/2009	
Lead	0.39J	μg/L	0.10	1	A Wilson	5/27/2009	
Manganese	37	μg/L	0.42	1	A Wilson	5/27/2009	
Nickel	1.6	μg/L	0.25	1	A Wilson	5/27/2009	
Selenium	U	μg/L	1.3	5	A Wilson	5/27/2009	
Silver	0.053J	μg/L	0.03	0.25	A Wilson	5/27/2009	
Thallium	0.044J	μg/L	0.03	1	A Wilson	5/27/2009	
Vanadium	U	μg/L	3.4	5	A Wilson	5/27/2009	
Zinc	U	μg/L	1.9	5	A Wilson	5/27/2009	

N00004568007

**Project Name:** 

Sample Description:

**EMORY RIVER MILE 0.1** 

Sampler Project Name: TVA ASH SPILL

**Project Site No.:** 

Station No.:

EMORY000.1RO

Date/Time Collected:

12:12 05/26/2009

Sampler's Name: County:

**GEOFF KLEIN** 

Sample Matrix:

ROANE - 73 Water

EFO: Sampling Agency: Knoxville TDEC-WPC

**Billing Code:** Send Report To: 327.34-20 TDEC-WPC

Agency Invoiced: **Priority Date:** 

TDEC-WPC

Date/Time Received:

05/26/2009

15:00

Received By:

TEST: Mercury

P D Wilson

ME	THOD	). FP	Δ 24	LS 1

**Field Determinations** 

Dissolved Oxygen: 11.84

Chlorine, residual:

Conductivity:

Temperature:

8.47

198

21.80 deg C

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	0.03J	μg/L	0.029	0.2	A Bass	5/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

N00004568008

**Project Name:** 

Sample Description:

**CLINCH RIVER MILE 2.3** 

Sampler Project Name: TVA ASH SPILL

**Project Site No.:** Station No.:

CLINC002.3RO

**Date/Time Collected:** Sampler's Name:

05/26/2009 12:22 **GEOFF KLEIN** 

County:

Sample Matrix:

ROANE - 73

EFO: Sampling Agency: Water Knoxville

**Billing Code:** 

TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced:

TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

**Field Determinations** 

pH:

8.35

pH Units

Chlorine, residual:

Conductivity:

190

uMHO

Temperature: Dissolved Oxygen: 11.40

21.68 deg C

mg/L

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	05/27/2009				S Ufegbu	5/27/2009	

TEST: ICP	T: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	260	μg/L	2.9	10	A Bass	5/29/2009	

TEST: ICP-MS	ME.	THOD: EPA 20	0.8					
ANALYTE	RESULT	UNITS	MDL	DL MQL ANALYZED B		Y: DATE		
Aluminum	400	μg/L	64.0	100	A Wilson	5/27/2009		
Antimony	Ú	μg/L	0.33	1	A Wilson	5/27/2009		
Arsenic	U	μg/L	0.93	5	A Wilson	5/27/2009		
Barium	37	μg/L	2.5	5	A Wilson	5/27/2009		
Beryllium	U	μg/L	0.11	1	A Wilson	5/27/2009		
Cadmium	U	μg/L	0.41	1	A Wilson	5/27/2009		
Chromium	U	μg/L	2.0	5	A Wilson	5/27/2009		
Cobalt	0.33J	μg/L	0.04	1	A Wilson	5/27/2009		
Copper	3.6	μg/L	0.38	1	A Wilson	5/27/2009		
Lead	0.49J	μg/L	0.10	1	A Wilson	5/27/2009		
Manganese	34	μg/L	0.42	1	A Wilson	5/27/2009		
Nickel	1.5	μg/L	0.25	1	A Wilson	5/27/2009		
Selenium	U	μg/L	1.3	5	A Wilson	5/27/2009		
Silver	U	μg/L	0.03	0.25	A Wilson	5/27/2009		
Thallium	0.066J	μg/L	0.03	1	A Wilson	5/27/2009		
Vanadium	U	μg/L	3.4	5	A Wilson	5/27/2009		
Zinc	U	μg/L	1.9	5	A Wilson	5/27/2009		

N00004568008

**Project Name:** 

Sample Description:

**CLINCH RIVER MILE 2.3** 

Sampler Project Name: TVA ASH SPILL

**Project Site No.:** 

Station No.:

CLINC002.3RO

Date/Time Collected:

05/26/2009 12:22

Sampler's Name:

**GEOFF KLEIN** 

County:

ROANE - 73

Sample Matrix:

EFO:

Water Knoxville

Sampling Agency: Billing Code:

TDEC-WPC

Send Report To:

327.34-20 TDEC-WPC

Agency Invoiced: **Priority Date:** 

TDEC-WPC

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

**Field Determinations** 

Dissolved Oxygen: 11.40

pH:

8.35

pH Units

Chlorine, residual:

Conductivity:

190

uMHO

Temperature:

21.68 deg C

mg/L

Other:

Flow:

**CFS** 

TEST: Mercury	ME	THOD: EPA 24	5.1			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	L80.0	μg/L	0.029	0.2	A Bass	5/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004568009

**Project Name:** 

Sample Description:

CLINCH RIVER TVA DISCHARGE POINT

Sampler Project Name: TVA ASH SPILL

Project Site No.:

5A

Station No.: KINGASHOUTF2
Date/Time Collected: 05/26/2009 12:31

Sampler's Name:

GEOFF KLEIN

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code: Send Report To: TDEC-WPC 327.34-20 TDEC-WPC

Agency Invoiced:

TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

**Field Determinations** 

pH:

7.90

pH Units

Chlorine, residual:

Conductivity:

199

uMHO

Temperature:

21.05 deg C

mg/L

**Dissolved Oxygen:** 10.40 **Other:** 

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY:					DATE	
Digestion Metals	05/27/2009				S Ufegbu	5/27/2009	

TEST: ICP	METHOD: EPA 200.7  RESULT UNITS MDL MQL ANALYZED BY: DATE					
ANALYTE						
Iron	340	μg/L	2.9	10	A Bass	5/29/2009

TEST: ICP-MS	MET	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	470	μg/L	64.0	100	A Wilson	5/27/2009
Antimony	U	μg/L	0.33	1	A Wilson	5/27/2009
Arsenic	U	μg/L	0.93	5	A Wilson	5/27/2009
Barium	44	μg/L	2.5	5	A Wilson	5/27/2009
Beryllium	U	μg/L	0.11	1	A Wilson	5/27/2009
Cadmium	U	μg/L	0.41	1	A Wilson	5/27/2009
Chromium	U	μg/L	2.0	5	A Wilson	5/27/2009
Cobalt	0.39J	μg/L	0.04	1	A Wilson	5/27/2009
Copper	4.0	μg/L	0.38	1	A Wilson	5/27/2009
Lead	0.66J	μg/L	0.10	1	A Wilson	5/27/2009
Manganese	41	μg/L	0.42	1	A Wilson	5/27/2009
Nickel	1.7	μg/L	0.25	1	A Wilson	5/27/2009
Selenium	U	μg/L	1.3	5	A Wilson	5/27/2009
Silver	U	μg/L	0.03	0.25	A Wilson	5/27/2009
Thallium	0.070J	μg/L	0.03	1	A Wilson	5/27/2009
Vanadium	U	μg/L	3.4	5	A Wilson	5/27/2009
Zinc	2.3J	μg/L	1.9	5	A Wilson	5/27/2009

N00004568009

**Project Name:** 

Sample Description:

**Project Site No.:** 

CLINCH RIVER TVA DISCHARGE POINT

Sampler Project Name: TVA ASH SPILL

5A

Station No.:

Date/Time Collected:

KINGASHOUTF2 05/26/2009 12:31

Sampler's Name:

**GEOFF KLEIN** 

County:

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code: Send Report To: TDEC-WPC 327.34-20

Agency Invoiced:

TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/26/2009 15:00

Received By:

P D Wilson

**Field Determinations** 

pH:

7.90

pH Units

Chlorine, residual:

Conductivity:

199

uMHO

Temperature: 21.05 deg C Dissolved Oxygen: 10.40

mg/L

Other:

Flow:

CFS

TEST: Mercury	ME	THOD: EPA 24				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	0.07J	μg/L	0.029	0.2	A Bass	5/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004568010

**Project Name:** 

Sample Description: Sampler Project Name: TVA ASH SPILL

CLINCH RIVER MILE 4.5 NEAR SUGAR GRO\ Chlorine, residual:

**Project Site No.:** 

Station No.:

Date/Time Collected:

CLINC004.5RO

Sampler's Name:

05/26/2009 12:41

County:

**GEOFF KLEIN** 

Sample Matrix:

ROANE - 73 Water

EFO: Sampling Agency: Knoxville

**Billing Code:** 

TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced:

TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/26/2009 15:00

Received By:

P D Wilson

**Field Determinations** 

pH:

8.50

pH Units

Conductivity:

213

uMHO

Temperature:

21.78 deg C **Dissolved Oxygen: 12.56** 

mg/L

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	05/27/2009				S Ufegbu	5/27/2009

TEST: ICP	CP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	270	μg/L	2.9	10	A Bass	5/29/2009	

TEST: ICP-MS	ME	THOD: EPA 200	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	370	μg/L	64.0	100	A Wilson	5/27/2009
Antimony	U	μg/L	0.33	1	A Wilson	5/27/2009
Arsenic	U	μg/L·	0.93	5	A Wilson	5/27/2009
Barium	38	μg/L	2.5	5	A Wilson	5/27/2009
Beryllium	U	μg/L	0.11	1	A Wilson	5/27/2009
Cadmium	U	μg/L	0.41	1	A Wilson	5/27/2009
Chromium	U	μg/L	2.0	5	A Wilson	5/27/2009
Cobalt	0.27J	μg/L	0.04	1	A Wilson	5/27/2009
Copper	1.7	μg/L	0.38	1	A Wilson	5/27/2009
Lead	0.39J	μg/L	0.10	1	A Wilson	5/27/2009
Manganese	37	μg/L	0.42	1	A Wilson	5/27/2009
Nickel	1.8	μg/L	0.25	1	A Wilson	5/27/2009
Selenium	U	μg/L	1.3	5	A Wilson	5/27/2009
Silver	U	μg/L	0.03	0.25	A Wilson	5/27/2009
Thallium	0.032J	μg/L	0.03	1	A Wilson	5/27/2009
Vanadium	U	μg/L	3.4	5	A Wilson	5/27/2009
Zinc	3.4J	μg/L	1.9	5	A Wilson	5/27/2009

N00004568010

**Project Name:** 

Sample Description:

CLINCH RIVER MILE 4.5 NEAR SUGAR GROV Chlorine, residual:

**Field Determinations** 

Dissolved Oxygen: 12.56

Conductivity:

Temperature:

8.50

213

21.78 deg C

pH Units

**uMHO** 

mg/L

**CFS** 

pH:

Other:

Flow:

Sampler Project Name: TVA ASH SPILL

**Project Site No.:** 

6

**Station No.:** 

CLINC004.5RO

**Date/Time Collected:** 

05/26/2009 12:41

Sampler's Name:

**GEOFF KLEIN** 

County: Sample Matrix: **ROANE - 73** 

EFO:

Water

Sampling Agency:

Knoxville

Billing Code: Send Report To: TDEC-WPC 327.34-20 **TDEC-WPC** 

Agency Invoiced:

TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/26/2009

15:00

Received By:

P D Wilson

TEST: Mercury	METHOD: EPA 245.1					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	5/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit